UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/701,201	11/27/2000	George Friedman	1235-00	7397

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EXAMINER
JACKSON, JENISE E

ART UNIT	PAPER NUMBER
2131	

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/701,201	FRIEDMAN ET AL.
	Examiner	Art Unit	
	Jenise E. Jackson	2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *33-36* is/are allowed.

6)☒ Claim(s) *1-5,7,8,16-20,22,23,31 and 32* is/are rejected.

7)☒ Claim(s) *10-15 and 25-30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____ .

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.   Claim 1-5, 7-8, 16-20, 22-23, 31-32 rejected under 35 U.S.C. 103(a) as being

unpatentable over Cabrera(5,978,815) in view of Shaath et al.(6,654,864), and further in view of

Miro(5,220,653).

3.   As per claims 1, 31-32, Cabrera et al. discloses a method for providing data security in a

first device driver operable installed in a computer operating system having a layered plurality of

device drivers for accessing data in a data storage device(see col. 3, lines 15-23, 52-56, col. 7,

lines 33-43), detecting an I/O request to said first device driver(see col. 7, lines 33-42, col. 16,

lines 12-53); determining whether said first device driver is functionally uppermost in the

layered plurality of device drivers(see col. 16, lines 12-22); if said first device driver is

functionally uppermost in the layered plurality of device drivers, performing the I/0 request in

said first device driver(see col. 7, lines 33-63). Cabrera does not disclose if said first device

driver is not functionally uppermost in the layered plurality of device drivers, denying the I/O

request in said first device driver, and allowing the I/O request to be performed by a next

lower-level device driver in the layered plurality of device drivers. However, Shaath discloses if

said first device driver is not functionally uppermost in the layered plurality of device drivers,

denying the I/O request in said first device driver, and allowing the I/O request to be performed

by a next lower-level device driver in the layered plurality of device drivers (see col. 6, lines 10-27). It would have been obvious to one of ordinary skill in the art at the time of the invention to include if said first device driver is not functionally uppermost in the layered plurality of device drivers, denying the I/O request in said first device driver, and allowing the I/O request to be performed by a next lower-level device driver in the layered plurality of device drivers of Shaath with Cabrera, the motivation is that an NT protected subsystem passes IO requests to the appropriate kernel mode driver through the IO system services(see col. 4, lines 33-36 of Shaath). The NT IO Manager's layered approach insulates NT drivers from having to know anything about whether an IO request originated in any particular subsystem (see col. 4, lines 43-49 of Shaath). Cabrera nor Shaath disclose wherein denying the I/O request in the first device driver includes implementing at least one data security measure before allowing the I/O request to be performed by the next lower level driver. Miro discloses denying the I/O request in the first device driver includes implementing at least one data security measure before allowing the I/O request to be performed by the next lower level driver (see col. 3, lines 50-62, col. 4, lines 14-65). It would have been obvious to one of ordinary skill in the art at the time of the invention to include Miro with the Cabrera-Shaath combination, because prioritizing servicing of I/O requests speed up the overall throughput of request servicing (see col. 3, lines 23-27 of Miro).

4.   As per claim 2, Cabrera et al. discloses wherein said first device driver is a file system monitor (see col. 4, lines 21-65).

5.   As per claim 3, Cabrera et al. discloses wherein the data is stored in a secure virtual File system, and wherein the step of performing the I/O request includes the step of implementing data security measures(see col. 20, lines 12-27).

6.   As per claim 4, Cabrera et al. discloses wherein the data is stored in encrypted form,

and wherein the step of performing the I/O request further comprises the step of decrypting

the data(see col. 25, lines 30-51, col. 26, lines 7-25).

7.   As per claim 5, Cabrera et al. discloses wherein the step of performing the I/0 request

further comprises the step of checking the data for viruses (see col. 9, lines 9-51).

8.   As per claim 7, Cabrera discloses wherein the step of denying the I/O request in the secure

first device driver comprises the steps of is setting a first device driver shutdown flag; and

initiating a re-hook process(see col. 6, lines 53-67, col. 7, lines 1-4) .

9.   As per claim 8, Cabrera discloses after the step of detecting an 1/0 request to said

first device driver, the checking whether a first device driver shutdown flag is set; and if

said first device driver shutdown flag is set, omitting further steps in said first device driver,

and allowing the 1/0 request to be performed by a next lower-level device driver in the

layered plurality of device drivers(see col. 7, lines 5-42).

10.   As per claim 16, it is rejected under the same basis as claim 1.

11.   As per claim 17, it is rejected under the same basis as claim 2.

12.   As per claim 18, it is rejected under the same basis as claim 3.

13.   As per claim 19, it is rejected under the same basis as claim 4.

14.   As per claim 20, it is rejected under the same basis as claim 5.

15.   As per claim 22, Cabrera discloses a first device driver shutdown flag and a re-hook

system, wherein said first device driver denies the I/O request by setting a first device driver

shutdown flag and calling the re-hook system(see col. 6, lines 53-67, col. 7, lines 1-4) .

16.   As per claim 23, it is rejected under the same basis as claim 8.

17. Claims 33, 35 is allowable for detecting an initial calling module address, storing the initial

calling module address, detecting a second calling module address and comparing the second

calling module address to the initial calling module address. Prior art fails to disclose

determining whether the first device driver has been previously called, detecting an initial calling

module address, storing the initial calling module address, detecting a second calling module

address and comparing the second calling module address to the initial calling module address,

in the prior art of network, security and drivers, prior art fails to disclose the limitations above.

An example of prior art that fails to disclose these limitations is, Cabrera discloses a layered

plurality of device drivers, and the I/O request is first passed to the first driver and either passed

down through the next driver in the list or processed within the first driver. This is in contrast, to

claim limitations above.

18. Claims 34, and 36 are allowable for the features of, if the number of times has not reached

a predetermined maximum threshold, initiating reattachment of said first device driver

functionally uppermost in the layered plurality of device drivers; if said first device driver has

been reattached functionally uppermost in the layered plurality of device drivers, unsetting said

first device driver shutdown flag; and concluding the re-hook process. An example of prior art

that does not disclose this is Jones, Jones discloses a plurality of driver layers, that when a host

request is received, the first layer device driver executing on the controller determines if the

request is atomic.

19. Claims 10-15, 25-30, are objected to as being rejected on base claims, these claims are

allowable for wherein the step of initiating a re-hook process includes the steps of counting the

number of times the re-hook process has been initiated checking whether the number of times

has reached a predetermined maximum threshold; if the number of times has reached a

predetermined maximum threshold, initiating a programmable security response; if the number

of times has not reached a predetermined maximum threshold, initiating reattachment of said

first device driver functionally uppermost in the layered plurality of device drivers; if said first

device driver has been reattached functionally uppermost in the layered plurality of device

drivers, unsetting said first device driver shutdown flag; and concluding the re-hook process. An

example of prior art that does not disclose this is Jones, Jones discloses a plurality of driver

layers, that when a host request is received, the first layer device driver executing on the

controller determines if the request is atomic.

Response to Amendment

20.   The Applicant has argued the limitations of "wherein denying the I/O request in the first

device driver includes implementing at least one data security measure before allowing the I/O

request to be performed by the next lower level", is not taught in Cabrera or Shaath. Miro

discloses denying the I/O request in the first device driver includes implementing at least one

data security measure before allowing the I/O request to be performed by the next lower level".

Miro discloses each disk I/O request presented to the service kernel of the operating system

contains a priority indication corresponding to the priority class of the associated task(see col. 4,

lines 50-53). The service kernel places each request into a selected one of the selected queue in

the set of holding queues associated with the targeted disk drive(see col. 4, lines 50-55).

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jenise E Jackson whose telephone number is (571) 272-3791.

The examiner can normally be reached on M-Th (6:00 a.m. - 3:30 p.m.) alternate Friday's.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

July 10, 2005

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